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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/811,207	03/26/2004	Cheisan J. Yue	P04,0097 (H0005049,SBE 16	1964
89941	7590	02/04/2010	EXAMINER	
HONEYWELL/S&S Patent Services 101 Columbia Road P.O.Box 2245 Morristown, NJ 07962-2245			MOVVA, AMAR	
			ART UNIT	PAPER NUMBER
			2894	
			NOTIFICATION DATE	DELIVERY MODE
			02/04/2010	ELECTRONIC

**Please find below and/or attached an Office communication concerning this application or proceeding.**

The time period for reply, if any, is set in the attached communication.

Notice of the Office communication was sent electronically on above-indicated "Notification Date" to the following e-mail address(es):

patentservices-us@honeywell.com  
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### Office Action Summary

**Application No.**

10/811,207

**Applicant(s)**

YUE ET AL.

**Examiner**

AMAR MOVVA

**Art Unit**

2894

**Period for Reply** -- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

#### Status

- 1) ☒ Responsive to communication(s) filed on 29 September 2009.
- 2a) ☒ This action is **FINAL**. 2b) ☐ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

#### Disposition of Claims

- 4) ☒ Claim(s) 1-41 is/are pending in the application.
- 4a) Of the above claim(s) 20-39 is/are withdrawn from consideration.
- 5) ☐ Claim(s) \_\_\_\_\_ is/are allowed.
- 6) ☒ Claim(s) 1-19, 40 and 41 is/are rejected.
- 7) ☐ Claim(s) \_\_\_\_\_ is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

#### Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on \_\_\_\_\_ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.  
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).  
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

#### Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some \* c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
  2. ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.
  3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

\* See the attached detailed Office action for a list of the certified copies not received.

#### Attachment(s)

- 1) ☒ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) ☐ Information Disclosure Statement(s) (PTO/GS/US)  
Paper No(s)/Mail Date \_\_\_\_\_
- 4) ☐ Interview Summary (PTO-413)  
Paper No(s)/Mail Date \_\_\_\_\_
- 5) ☐ Notice of Informal Patent Application
- 6) ☐ Other: \_\_\_\_\_

**DETAILED ACTION**

***Claim Rejections - 35 USC § 103***

1. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

2. Claims 1-19, 40 and 41 are rejected under 35 U.S.C. 103(a) as being unpatentable over Hiramoto '329 in view of Hutter '052.

- a. Hiramoto discloses an integrated circuit comprising: a semiconductor substrate (1, fig. 10,11); a buried insulation layer (15, fig. 10) directly over the semiconductor substrate; a first semiconductor mesa (3, 15, fig. 10,11) over the buried insulation layer; a first guard ring (14, fig. 10,11) substantially surrounding the first semiconductor mesa, and wherein the first guard ring is arranged to provide RF isolation for the first semiconductor mesa (fig. 10); a second guard ring substantially surrounding the second semiconductor mesa (in fig. 11 (d) the separate solid line grooves that face each mesa on three sides are the first and second guard rings), and wherein the second guard ring is arranged to provide RF isolation for the second semiconductor mesa; and, a third guard ring (one of the two dotted lines in fig. 11(d)) between the first and second guard rings,, and wherein the third guard ring is arranged to provide further RF isolation for the first and second semiconductor mesas. [claim 3,7,11,15] The semiconductor substrate comprises a silicon substrate, wherein the buried insulating layer

comprises a buried silicon oxide layer, and wherein the first semiconductor mesa comprises a silicon mesa and wherein the second semiconductor mesa comprises a silicon mesa (col. 7). [claim 41] The first semiconductor mesa is one of a first group of semiconductor mesas, wherein the first guard ring individually surrounds each semiconductor mesa in the group of semiconductor mesas, and wherein the third guard ring surrounds the first guard ring (fig. 11 (d)). Hiramoto, however, does not expressly disclose that the guard rings are low resistivity tungsten metal guard rings which contact a doped area of a high resistivity semiconductor substrate.

a. Hutter discloses a semiconductor device which implement guard rings as low resistivity tungsten metal guard rings (82, 54, 182, fig. 9,20) which are embedded in a doped area of a high resistivity semiconductor substrate (10, fig. 20).

b. It would have been obvious to one of ordinary skill in the art at the time of the invention to have used Hutter's guard rings Hiramoto's device in order to reduce parasitic capacitance prevalent in oxide trench isolation (lines 55-65, col. 1 of Hutter).

Please Note: With this modification, Hiramoto/Hutter also disclose [claim 9] A first insulating ring (26,28, fig. 9 Hutter) between the first guard ring and the first semiconductor mesa, wherein the first insulating ring surrounds the first semiconductor mesa and a second insulating ring between the second guard ring and the second

semiconductor mesa, wherein the second insulating ring surrounds the second semiconductor mesa (fig. 9, fig. 20 Hutter).

### ***Response to Arguments***

2. Applicant's arguments have been considered but are moot in view of the new ground(s) of rejection.

### ***Conclusion***

3. Applicant's amendment necessitated the new ground(s) of rejection presented in this Office action. Accordingly, **THIS ACTION IS MADE FINAL**. See MPEP § 706.07(a). Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire **THREE MONTHS** from the mailing date of this action. In the event a first reply is filed within **TWO MONTHS** of the mailing date of this final action and the advisory action is not mailed until after the end of the **THREE-MONTH** shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than **SIX MONTHS** from the date of this final action.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to AMAR MOVVA whose telephone number is (571)272-9009. The examiner can normally be reached on 7:30 AM - 4:30 PM.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Kimberly Nguyen can be reached on 571-272-2402. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

Amar Movva  
Examiner  
Art Unit 2894

Am

/Bradley K Smith/  
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